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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,087	03/31/2004	Takahiro Ochiai	HITA.0535	5095

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EXAMINER

SANEI, HANA ASMAT

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/813,087	Applicant(s) OCHIAI ET AL.	
	Examiner Hana A. Sanei	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on 8/28/06, has been entered and acknowledged by the Examiner.

Cancellation of claims 1, 7-8 has been entered.

Claims 2-6, 9-10 are pending in the instant application

The new drawings have been entered.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 2, 4, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Konya et al (JP 7-72508).

Regarding Claim 2, Konya teaches signal lines (address line terminal film, 31a; see at least Figs. 4-5) which are formed on an upper surface side of a substrate (1) to provide a display region; an insulation film (24) which is formed such that the film covers the signal lines except for terminal portions of the signal lines in periphery of the

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substrate; and conductive layers (31b) which extend in an extension direction of the signal lines such that the conductive layers traverse the terminal portions, wherein a pair of gaps (35, Fig. 10, same elemental factors as Fig. 4 but with a different embodiments via modifying the 34 of Fig. 4 to a pair of gaps 35 of Fig. 10) are formed on respective sides of each of conductive layers parallel to the extension direction as well as between each conductive layer and the insulation film (24), a pair of holes (24b) are formed in the signal lines at portions corresponding to the pair of gaps along the extension direction, and each conductive layer (31b) is formed on the signal lines (31a) and between the pair of holes (24b), while the insulated film (24) is formed on the signal lines (31a) and outside of the pair of holes (24b). It should be noted that the each conductive layer is inherently formed "between" the pair of holes.

Regarding Claim 4, Konya teaches gate signal lines (11, see at least Figs. 12-13), drain signal lines (16) and interlayer insulation films (23) which are formed between the respective signal lines (22) are formed on a display region, and a material of the insulation films (24, SiN, [0008]) is identical with a material of the interlayer insulation film (23, SiN, [0007]).

Regarding Claim 10, Konya teaches signal lines (address line terminal film, 31a; see at least Figs. 4-5) which are formed on an upper surface side of a substrate (1) to provide a display region; an insulation film (24) which is formed to cover the signal lines except for terminal portions of the signal lines in periphery of the substrate; and conductive layers (31b) which extend in an extension direction of the signal lines such that the conductive layers traverse the terminal portions, wherein each of the signal

lines branches to three (35, Fig. 10, same elemental factors as Fig. 4 but with a different embodiments via modifying the 34 of Fig. 4 to a pair of gaps 35 of Fig. 10) along the extended direction to provide a central portion and two side portions one two sides of the main portion, and each conductive layer is formed on the central, and the insulation film is formed on the side of the portions (Fig. 4-5).

2. Claims 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Dojo et al (US 2002/0132385 A1).

Regarding Claim 5, Dojo teaches signal lines (131, signal line connection layer, see at least Fig. 13) which are formed on an upper surface side of the substrate (101) to provide a display region; semiconductor layers (123) which are formed below the signal lines (131) byway of a first insulation film (127, interlayer dielectric layer) such that the semiconductor layers traverse the signal lines at terminal portions of the signal lines in a periphery of the substrate; a second insulation film (141, see final product of device, Fig. 6) which is formed on top of the substrate to cover the signal lines and in which holes (153, 154, 155, & 156) are formed above regions thereof where the semiconductor layers are formed; and conductive layers (125a & 125b) which have respective sides thereof in the extension direction of the signal lines arranged at both sides of the signal lines and are connected with respective semiconductor layers, wherein the display region includes thin film transistors (TFT Region, Fig. 13), and a material of the semiconductor layers in the periphery of the substrate (low resistance semiconductor material, [0054]) is equal to a material of the semiconductor layers of the thin film transistors (low resistance semiconductor material, [0097]) in the display region.

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Regarding Claim 9, Dojo teaches gate signal lines (included in 111, see at least Fig. 13), drain signal lines (included in 111) and interlayer insulation films (127) which are formed between the respective signal lines (131) are formed on a display region and a material of the second insulation film (141, [0032]) is identical with a material of the interlayer insulation films (127, [0038]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konya et al (JP 7-72508) in view of Ono et al (US 6356331 B1) in further view of Ono et al (US 2002/0047970 A1) hereinafter referred to as '970.

Regarding Claims 3, Konya teaches the invention set forth above (see rejection in Claim 2 above) and further teaches gate signal lines (11) and drain signal lines (16). Konya lacks the material of the signal lines being equal to a material of the gate signal lines. In the same field of endeavor, Ono teaches the material of the signal lines (CL, Col. 5, lines 22-25) being equal to a material of the gate signal lines (GL) in order to achieve the advantage of preventing an increase in the number of manufacturing steps (Col. 5, lines 25-27). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the materials, as disclosed by Ono, in the

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device of Konya in order to achieve the advantage of preventing an increase in the number of manufacturing steps.

Konya-Ono lacks the material of the conductive layer being equal to the material of the drain signal lines. In the same field of endeavor, '970 teaches the conductive layer (SD1; [0075]) being equal to the material of the drain signal lines (DL) in order to ensure the improvement in reliability of connection with the semiconductor layer AS stated supra ([0075]). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the materials, as disclosed by Ono, in the device of Konya in order to ensure the improvement in reliability of connection with the semiconductor layer.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dojo et al (US 2002/0132385 A1) in view of Ono et al (US 6356331 B1) in further view of Ono et al (US 2002/0047970 A1) hereinafter referred to as '970.

Regarding Claims 6, Dojo teaches the invention set forth above (see rejection in Claim 5 above) and further teaches gate signal lines and drain signal lines ([0014], [0041], 111 region, see at least Fig. 13). Dojo lacks the material of the signal lines being equal to a material of the gate signal lines. In the same field of endeavor, Ono teaches the material of the signal lines (CL, Col. 5, lines 22-25) being equal to a material of the gate signal lines (GL) in order to achieve the advantage of preventing an increase in the number of manufacturing steps (Col. 5, lines 25-27). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to

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modify the materials, as disclosed by Ono, in the device of Dojo in order to achieve the advantage of preventing an increase in the number of manufacturing steps.

Dojo-Ono lacks the material of the conductive layer being equal to the material of the drain signal lines. In the same field of endeavor, '970 teaches the conductive layer (SD1; [0075]) being equal to the material of the drain signal lines (DL) in order to ensure the improvement in reliability of connection with the semiconductor layer AS stated supra ([0075]). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the materials, as disclosed by Ono, in the device of Dojo in order to ensure the improvement in reliability of connection with the semiconductor layer.

Response to Arguments

Applicant's arguments filed on 8/15/06 have been fully considered but they are not persuasive.

In response to Applicant's arguments that Konya does not disclose the claimed invention, the Examiner respectfully disagrees.

The insertion of "to provide a display region," in respective claims 1, 5, and 10 does not distinctly distinguish between two plausible scenarios of the signal lines being (a) part of the display region or (b) bordering a display region but not being part of the display region. Both (a) and (b) are independent scenarios that Examiner suggests Applicant clarify. Furthermore, Applicant does not clarify, via the claim language employed, whether the "conductive layer" may be in either (a) continuous strip formation

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or (b) discontinuous strip formation. Hence, allowing Examiner to interpret the claims as is done above (see Rejections).

Regarding the claim language directed to Claim 10, the applicant does not negate the possibility that the feature of the signal lines branching to "three" is continuous rather than discontinuous. Should the branching be "discontinuous," a better reflection of the applicant's submitted figures would be rendered.

For the reasons stated above, the rejection of the claims is deemed proper.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hana A. Sanei whose telephone number is (571) 272-8654. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone

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number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hana A. Sanei
Examiner



Joseph Williams
Primary Examiner